



results of BLAST

BLASTP 2.2.8 [Jan-05-2004]

Reference:

Altschul, Stephen F., Thomas L. Madden, Alejandro A. Schäffer, Jinghui Zhang, Zheng Zhang, Webb Miller, and David J. Lipman (1997), "Gapped BLAST and PSI-BLAST: a new generation of protein database search programs", *Nucleic Acids Res.* 25:3389-3402.

RID: 1081981467-19431-71379995229.BLASTQ3

Query=

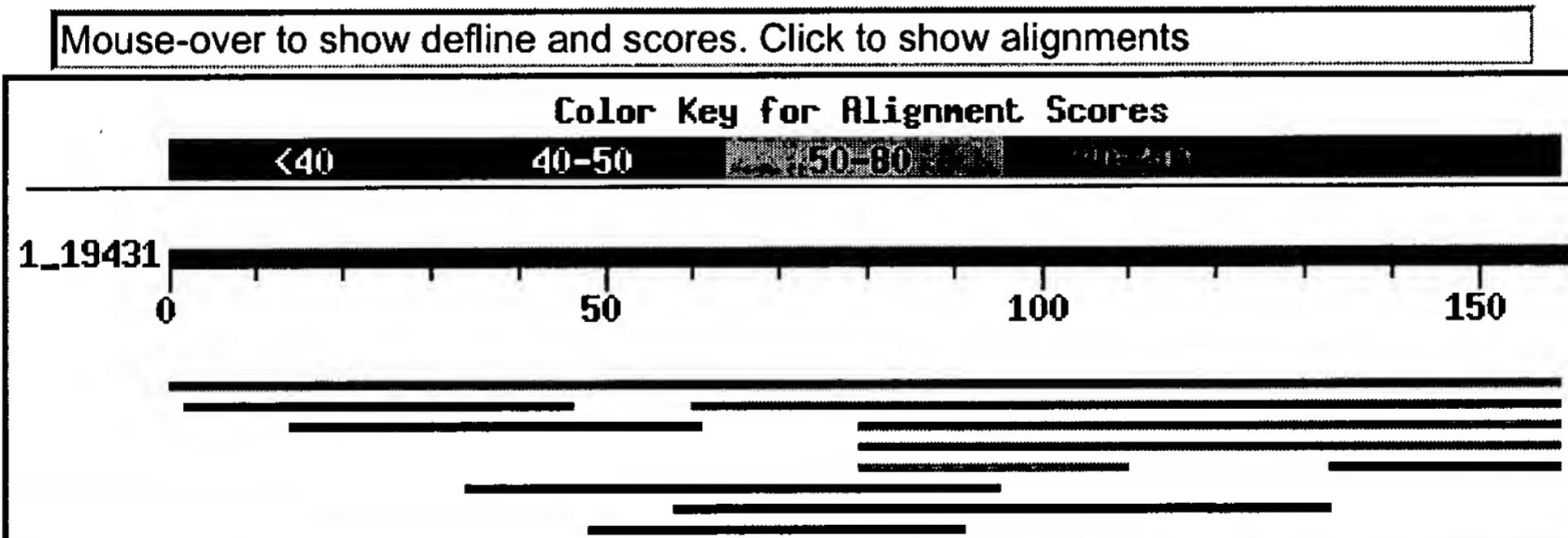
(160 letters)

Database: All non-redundant GenBank CDS translations+PDB+SwissProt+PIR+PRF
2,763,327 sequences; 776,568,843 total letters

If you have any problems or questions with the results of this search please refer to the [BLAST FAQs](#)

[Taxonomy reports](#)

Distribution of 11 Blast Hits on the Query Sequence



Sequences producing significant alignments:	Score (bits)	E Value	
gi 19747281 ref NP_597674.1 G antigen, family D, 2 isoform...	291	2e-78	L
gi 9966899 ref NP_065144.1 G antigen, family D, 2 isoform ...	175	4e-43	L
gi 30585093 gb AAP36819.1 Homo sapiens G antigen, family D...	148	4e-35	
gi 13992499 emb CAC38107.1 9 kD cancer/testis associated p...	147	9e-35	L
gi 19747279 ref NP_597673.1 G antigen, family D, 2 isoform...	62	3e-09	
gi 43770338 gb EAF39621.1 unknown [environmental sequence]	35	0.64	
gi 15227183 ref NP_179229.1 40S ribosomal protein S25 (RPS...	35	0.83	
gi 7191040 gb AAC15713.2 transcription factor Pax-A [Acrop...	33	1.6	

gi 19747283 ref NP_570133.1	G antigen, family D, 3; XAGE-2...	33	1.6	L
gi 23059365 ref ZP_00084339.1	COG1366: Anti-anti-sigma reg...	33	1.6	
gi 2463276 emb CAA74096.1	F420-reducing hydrogenase isoenz...	32	5.9	

Alignments

Get selected sequences Select all Deselect all

>gi|19747281|ref|NP_597674.1| L G antigen, family D, 2 isoform 1c; XAGE-1 protein [Homo sapiens]
 gi|18157206|emb|CAC82986.1| L XAGE-1c protein [Homo sapiens]

Length = 160

Score = 291 bits (746), Expect = 2e-78
 Identities = 160/160 (100%), Positives = 160/160 (100%)

Query: 1 MRCAHGPSCLVTAITREEGGPRSGGAQAKLGCCWGYPSPRSTWNPDRRFWTPQTGPGE 60
 MRCAHGPSCLVTAITREEGGPRSGGAQAKLGCCWGYPSPRSTWNPDRRFWTPQTGPGE

Sbjct: 1 MRCAHGPSCLVTAITREEGGPRSGGAQAKLGCCWGYPSPRSTWNPDRRFWTPQTGPGE 60

Query: 61 RHERHTQTQNHTASPRSPVMESPDKKNQQLKVGILHLGSRQKKIRIQLRSQCATWKVICK 120
 RHERHTQTQNHTASPRSPVMESPDKKNQQLKVGILHLGSRQKKIRIQLRSQCATWKVICK

Sbjct: 61 RHERHTQTQNHTASPRSPVMESPDKKNQQLKVGILHLGSRQKKIRIQLRSQCATWKVICK 120

Query: 121 SCISQTPGINLDLGSVVKVIIIPKEEHCKMPEAGEEEQPQV 160
 SCISQTPGINLDLGSVVKVIIIPKEEHCKMPEAGEEEQPQV

Sbjct: 121 SCISQTPGINLDLGSVVKVIIIPKEEHCKMPEAGEEEQPQV 160

>gi|9966899|ref|NP_065144.1| L G antigen, family D, 2 isoform 1a; XAGE-1 protein [Homo sapiens]

gi|17376379|sp|Q9HD64|GGD2_HUMAN L G antigen family D 2 protein (XAGE-1 protein)

gi|9885325|gb|AAG01401.1| L XAGE-1 [Homo sapiens]

Length = 146

Score = 175 bits (443), Expect = 4e-43
 Identities = 98/100 (98%), Positives = 98/100 (98%)

Query: 61 RHERHTQTQNHTASPRSPVMESPDKKNQQLKVGILHLGSRQKKIRIQLRSQCATWKVICK 120
 RH HTQTQNHTASPRSPVMESPDKKNQQLKVGILHLGSRQKKIRIQLRSQCATWKVICK

Sbjct: 47 RHGGHTQTQNHTASPRSPVMESPDKKNQQLKVGILHLGSRQKKIRIQLRSQCATWKVICK 106

Query: 121 SCISQTPGINLDLGSVVKVIIIPKEEHCKMPEAGEEEQPQV 160
 SCISQTPGINLDLGSVVKVIIIPKEEHCKMPEAGEEEQPQV

Sbjct: 107 SCISQTPGINLDLGSVVKVIIIPKEEHCKMPEAGEEEQPQV 146

>gi|30585093|gb|AAP36819.1| Homo sapiens G antigen, family D, 2 [synthetic construct]

Length = 82

Score = 148 bits (374), Expect = 4e-35
 Identities = 81/81 (100%), Positives = 81/81 (100%)

Query: 80 MESPKKKNQQLKVGILHLGSRQKKIRIQLRSQCATWKVICKSCISQTPGINLDLGSVVKV 139

Alignment

MESPKKKNQQLKVGILHLGSRQKKIRIQLRSQCATWKVICKSCISQTPGINLDLGSGVKV
 Sbjct: 1 MESPKKKNQQLKVGILHLGSRQKKIRIQLRSQCATWKVICKSCISQTPGINLDLGSGVKV 60

Query: 140 KIIPKEEHCKMPEAGEEEQPQV 160
 KIIPKEEHCKMPEAGEEEQPQV
 Sbjct: 61 KIIPKEEHCKMPEAGEEEQPQV 81

>gi|13992499|emb|CAC38107.1| L 9 kD cancer/testis associated protein [Homo sapiens]
 gi|13992558|emb|CAC38108.1| L cancer/testis-associated protein XAGE-1b [Homo sapiens]
 gi|16306935|gb|AAH09538.1| L GAGED2 protein [Homo sapiens]
 gi|30583037|gb|AAP35763.1| G antigen, family D, 2 [Homo sapiens]
 Length = 81

Score = 147 bits (370), Expect = 9e-35
 Identities = 81/81 (100%), Positives = 81/81 (100%)

Query: 80 MESPKKKNQQLKVGILHLGSRQKKIRIQLRSQCATWKVICKSCISQTPGINLDLGSGVKV 139
 MESPKKKNQQLKVGILHLGSRQKKIRIQLRSQCATWKVICKSCISQTPGINLDLGSGVKV
 Sbjct: 1 MESPKKKNQQLKVGILHLGSRQKKIRIQLRSQCATWKVICKSCISQTPGINLDLGSGVKV 60

Query: 140 KIIPKEEHCKMPEAGEEEQPQV 160
 KIIPKEEHCKMPEAGEEEQPQV
 Sbjct: 61 KIIPKEEHCKMPEAGEEEQPQV 81

>gi|19747279|ref|NP_597673.1| L G antigen, family D, 2 isoform 1d; XAGE-1 protein [Homo sapiens]
 gi|18157208|emb|CAC82987.1| L XAGE-1d protein [Homo sapiens]
 Length = 69

Score = 62.4 bits (150), Expect = 3e-09
 Identities = 32/32 (100%), Positives = 32/32 (100%)

Query: 80 MESPKKKNQQLKVGILHLGSRQKKIRIQLRSQ 111
 MESPKKKNQQLKVGILHLGSRQKKIRIQLRSQ
 Sbjct: 1 MESPKKKNQQLKVGILHLGSRQKKIRIQLRSQ 32

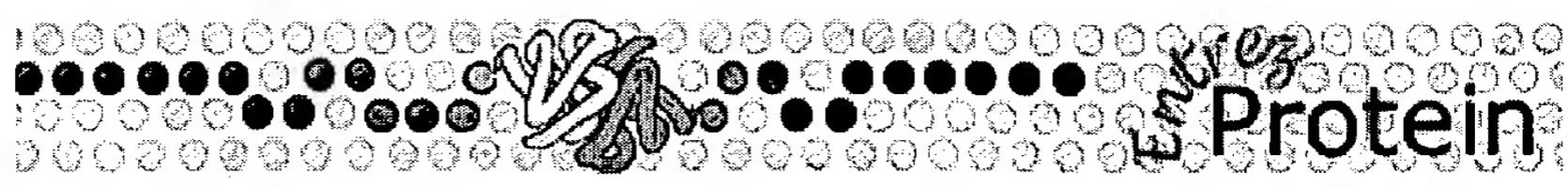
>gi|43770338|gb|EAF39621.1| unknown [environmental sequence]
 Length = 315

Score = 35.0 bits (79), Expect = 0.64
 Identities = 20/67 (29%), Positives = 32/67 (47%), Gaps = 8/67 (11%)

Query: 35 WGYPSPRSTWNPDRRFWTPQTGPGEGR-----HERHTQTQNHTASPRSPVMESPKKKNQQ 89
 W Y S ++ W ++R+W +T E R HE T+T R+ V+ K++ +
 Sbjct: 15 WSYVSNKNNWVENQRYWIEKTKHLEDRLSDRLHEELTKT---FIDKRASVLARGLKQDME 71

Query: 90 LKVGILH 96
 K ILH
 Sbjct: 72 FKTEILH 78

>gi|15227183|ref|NP_179229.1| 40S ribosomal protein S25 (RPS25A) [Arabidopsis thaliana]
 Length = 96



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1: [NP_065144](#). G antigen, family...[gi:9966899]

LOCUS NP_065144 146 aa linear PRI 21-DEC-2003
DEFINITION G antigen, family D, 2 isoform 1a; XAGE-1 protein [Homo sapiens].
ACCESSION NP_065144
VERSION NP_065144.1 GI:9966899
DBSOURCE REFSEQ: accession NM_020411.1
KEYWORDS
SOURCE Homo sapiens (human)
ORGANISM Homo sapiens
 Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
REFERENCE
AUTHORS Egland,K.A., Kumar,V., Duray,P. and Pastan,I.
TITLE Characterization of overlapping XAGE-1 transcripts encoding a cancer testis antigen expressed in lung, breast, and other types of cancers
JOURNAL Mol. Cancer Ther. 1 (7), 441-450 (2002)
PUBMED 12479262
REMARK GeneRIF: transcription of the XAGE-1 gene is initiated from two distinct start sites, resulting in two overlapping transcripts, XAGE-1a and XAGE-1b; XAGE-1 is expressed in a diverse range of cancers
REFERENCE
AUTHORS Zendman,A.J., Van Kraats,A.A., Weidle,U.H., Ruiter,D.J. and Van Muijen,G.N.
TITLE The XAGE family of cancer/testis-associated genes: alignment and expression profile in normal tissues, melanoma lesions and Ewing's sarcoma
JOURNAL Int. J. Cancer 99 (3), 361-369 (2002)
PUBMED 11992404
REMARK GeneRIF: The XAGE family of cancer/testis-associated genes: alignment and expression profile in normal tissues, melanoma lesions and Ewing's sarcoma
REFERENCE
AUTHORS Zendman,A.J., van Kraats,A.A., den Hollander,A.I., Weidle,U.H., Ruiter,D.J. and van Muijen,G.N.
TITLE Characterization of XAGE-1b, a short major transcript of cancer/testis-associated gene XAGE-1, induced in melanoma metastasis
JOURNAL Int. J. Cancer 97 (2), 195-204 (2002)
PUBMED 11774264
REFERENCE
AUTHORS Liu,X.F., Helman,L.J., Yeung,C., Bera,T.K., Lee,B. and Pastan,I.
TITLE XAGE-1, a new gene that is frequently expressed in Ewing's sarcoma
JOURNAL Cancer Res. 60 (17), 4752-4755 (2000)
PUBMED 10987281
REFERENCE
AUTHORS Brinkmann,U., Vasmatzis,G., Lee,B. and Pastan,I.
TITLE Novel genes in the PAGE and GAGE family of tumor antigens found by homology walking in the dbEST database

JOURNAL Cancer Res. 59 (7), 1445-1448 (1999)
PUBMED 10197611
COMMENT REVIEWED REFSEQ: This record has been curated by NCBI staff. The reference sequence was derived from AF251237.1.

Summary: This gene is a member of the XAGE subfamily, which belongs to the GAGE family. The GAGE genes are expressed in a variety of tumors and in some fetal and reproductive tissues. This gene is strongly expressed in Ewing's sarcoma, alveolar rhabdomyosarcoma and normal testis. The protein encoded by this gene contains a nuclear localization signal and shares a sequence similarity with other GAGE/PAGE proteins. Because of the expression pattern and the sequence similarity, this protein also belongs to a family of CT (cancer-testis) antigens. Alternative splicing of this gene generates 3 transcript variants, and one of which includes 2 transcripts generated from alternate transcription initiation sites.

Transcript Variant: This variant (1) includes 2 transcripts with different sizes. The longer transcript encodes isoform (1a). The shorter transcript is the major product of the gene. Its ORF is in-frame with the longer transcript but encodes an N-terminal truncated isoform (1b), as compared to isoform (1a).

FEATURES	Location/Qualifiers
source	1..146 /organism="Homo sapiens" /db_xref="taxon:9606" /chromosome="X" /map="Xp11.22-p11.21"
<u>Protein</u>	1..146 /product="G antigen, family D, 2 isoform 1a" /note="XAGE-1 protein"
<u>Region</u>	66..146 /region_name="isoform 1b encoded by the short transcript" /note="XAGE-1b"
<u>Region</u>	70..89 /region_name="nuclear localization signal"
<u>CDS</u>	1..146 /gene="GAGED2" /coded_by="NM_020411.1:86..526" /note="XAGE-1 protein isoform 1a is encoded by transcript variant 1" /db_xref="GeneID:9503" /db_xref="LocusID:9503" /db_xref="MTM:300289"

ORIGIN
1 mllwcppqca cslgvfpsap spwgtrrsc epatrvpevw ilspl1rhgg htqtqnhtas
61 prspvmespk kknqqlkvgi lhlgsrcqkki riqlrsqcat wkvickscis qtpginldlg
121 sgvkykiinp eehckmpeaq eegpav